

REMARKS

Claims 1-8 are pending. No claims have been allowed.

The Examiner rejected Claims 1, 2, 6, and 7 under 35 U.S.C §103(a) as being obvious in view of U.S. Patent No. 6,058,741 to Sobolev et al. ("Sobolev et al. '741"). The Examiner rejected Claims 3, 4 and 8 under 35 U.S.C §103(a) as being obvious over Sobolev et al. '741 in view of "A Crucible-Type Induction Furnace for Melting Glass", U.S. Consultants Bureau, Vol. 48, No. 7, July 1991, Pgs. 288-290 ("Lifanov et al.").

Sobolev et al. '741 discloses a cooled induction melter 20, shown in Fig. 5, for use in an apparatus for processing homogeneous and heterogeneous radioactive wastes. Melter 20 includes sidewalls 22 and bottom 23 made of metal pipes having gaps 24 therebetween, and collector 25 for supplying and discharging a coolant. Melter 20 also includes a cooled discharge unit 1, and an inductor 35 which concentrically encompasses sidewalls 22 of housing 21 and is displaceable along the longitudinal axis of melter 20.

Lifanov et al. discloses an induction melting crucible, shown in the Figure, including ". . . two flat rectangular sections 1 and 2 and two semicircular ones 3, which are formed by metal tubes with the upper and lower collectors for the cooling water . . . [t]he crucible is made of sections, which enables one to alter the dimensions and volume in order to adjust the surface area and throughput." (See the third full paragraph of Lifanov et al.). The crucible additionally includes drainage device 10 and copper coil 12.

Amended independent Claim 1 calls for a skull pot for the melting or the refining of glass or glass ceramics, including a pot wall made up of a ring of metal pipes connected to a cooling medium, with slit-like gaps between neighboring metal pipes, all of the metal pipes short circuited with each other; a pot base having a runoff for the melt; and an induction coil which surrounds the pot wall and through which high-energy frequency can be coupled into the content of the pot.

Applicants respectfully submit that independent Claim 1 is not obvious in view of either Sobolev et al. '741 or Lifanov et al., either alone or in combination, because each of the foregoing references fails to disclose a skull pot including a pot wall made of a ring of metal pipes connected to a cooling medium, all the metal pipes short circuited with each other, as called for in independent Claim 1.

Sobolev et al. '741 discloses induction melter 20, which includes sidewalls 22 and bottom 23 made of metal pipes having gaps 24 therebetween but, as noted by the Examiner, is silent as to the material which is used to form collector 25. In view of the foregoing, the Examiner stated in the Office Action that "Sobolev is silent on the material of construction of said collector, however, it would have been obvious to one skilled in the art at the time the invention was made, that the collector be made of a metal as are the metal pipes since both the collector and the pipes are exposed to the same operating conditions." (See the Office Action dated March 19, 2004 at Page 2).

Applicants respectfully disagree with the foregoing, and submit that one of ordinary skill in the art would not make the collector 25 of the Sobolev et al. '741 induction melter 20 out of metal. As discussed in the specification of the present patent application, known crucibles are specifically designed to avoid a short between their metal cooling pipes in order to avoid damage to the metal pipes which may be caused by arcing between the metal pipes. (See the present patent application at page 3, sixth paragraph through page 4, second paragraph, and page 6, second full paragraph). For Example, as discussed on page 6 of the present patent application, U.S. Patent No. 4,049,384 discloses a crucible including a pair of modules each having cooling pipes, wherein the modules are spaced from one another to avoid a short therebetween. Known crucibles typically employ plastic or ceramic wherever possible around the cooling pipes to avoid arcing between the cooling pipes. Thus, one of ordinary skill in the art, without knowledge of Applicants' claimed invention, would not make collector 25 of the Sobolev et al. '741 crucible out of metal, but rather would make collector 25 out of a material other than metal, such as plastic or ceramic, to thereby electrically insulate the cooling pipes from one another to avoid possible damage due to arcing.

Lifanov et al. discloses that the tubes which make up the walls of the Lifanov et al. crucible are made of metal but, similar to Sobolev et al. '741, is silent as to the material which is used for the upper and lower collectors of the Lifanov et al. crucible. As shown in the Figure and disclosed by Lifanov et al., the Lifanov et al. crucible includes first, second, and third segments 1, 2, and 3, wherein the segments 1, 2, and 3 cooperate to form the collectors. One of ordinary skill in the art, without knowledge of Applicants' claimed invention, would not make the collectors of the Lifanov et al. crucible out of metal for at least the reasons discussed above with respect to Sobolev et al. '741. Further, one of ordinary skill in the art

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would recognize that the segmented construction of the Livanov et al. crucible, although disclosed as being helpful for enabling the dimensions of the crucible to be altered, would not be desirable if the collectors were made of metal, as it will be very difficult to connect the ends of the various collector segments in a manner in which same could conduct a high frequency energy therebetween.

For the foregoing reasons, Applicants respectfully submit that amended independent Claim 1 is not obvious over Sobolov et al. '741 or Livanov et al., either alone or in combination with one another, because each of the foregoing references fails to disclose a skull pot including a pot wall made of a ring of metal pipes connected to a cooling medium, all the metal pipes short circuited with each other, as called for in independent Claim 1. Further, because Claims 2-8 each depend from amended independent Claim 1, Applicants further submit that Claims 2-8 are also not obvious over the foregoing references, either alone or in combination with one another.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested. Specifically, Applicants respectfully submit that the application is in condition for allowance and respectfully requests allowance thereof.

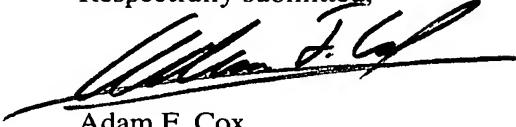
In the event Applicants have overlooked the need for an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby petition therefore and authorize that any charges be made to Deposit Account No. 02-0385, Baker & Daniels.

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Should the Examiner have any further questions regarding any of the foregoing, he is respectfully invited to telephone the undersigned at (260) 424-8000.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: June 11, 2004

ADAM F. COX, REG. NO. 46,644

Name of Registered Representative



Signature

June 11, 2004

Date